

Listing of Claims:

1. (Currently Amended) A method of an opto-chemical multiband sensing or a molecular identification comprising steps of: providing a composition capable of characteristic multiband spectral absorption or multiband spectral emission when the composition is excited by a surface plasmon resonance source, the composition comprising a fluorophore, a nanoparticle and a spacer, wherein the spacer separates the fluorophore from the nanoparticle; placing the composition into a sample containing an analyte to allow for a chemical interaction of the composition with the analyte; irradiating the sample by the source; and monitoring the multiband spectral absorption or multiband spectral emission of the composition for each chemical interaction of the composition with the analyte.

~~A method of plasmon-induced multiband optical sensing or molecular identification comprising steps of: providing a composition capable of characteristic multiband spectral absorption or multiband spectral emission, the composition comprising a molecule and a plasmon-excited nanoparticle, wherein the molecule is located within plasmon fields of the nanoparticle and the molecule has a plasmon-induced multiband spectral property; allowing a sample containing an analyte to interact with the compositions; and monitoring the multiband spectral absorption or multiband spectral emission of the molecule for each interaction between the composition and the analyte of the sample.~~

2. (Currently Amended) The method of claim 1, wherein the ~~molecule~~ fluorophore is an organic molecule, an inorganic molecule, a biomolecule or a microbe.
3. Cancelled

4. (Original) The method of claim 1, wherein the analyte is selected from the group consisting of glucose, inorganic molecule, organic molecule, protein, amino acid, oligonucleotide, lipid, sugar moiety, purine or pyrimidine, nucleoside or nucleotide.
5. (Currently Amended) The method of claim 1, wherein ~~the composition further comprising a spacer placed between the molecule and the nanoparticle and the spacer~~ is selected from the group consisting of: a biorecognitive spacer, a dielectric spacer, a chemical link spacer, an analyte sensitive spacer or a polymer spacer.
6. (Currently Amended) The method of claim 1, wherein the nanoparticle is ~~made of a metal, a material with an electric property selected from the group of:~~ conductor, super-conductor, semiconductor or dielectric.
7. (Original) The method of claim 6, wherein the metal is selected from the group consisting of silver, ruthenium, platinum, rhenium, rhodium, osmium, iridium, copper, palladium and gold.
8. (Currently Amended) The method of claim 1, wherein the ~~metal~~ nanoparticle is sub-wavelength less ~~than~~ in size.
9. (Currently Amended) The method of claim 1, wherein the spacer separates the ~~molecule~~ fluorophore from the ~~metal~~ nanoparticle by a distance longer than 10 nm.
10. Cancelled
11. Cancelled
12. Cancelled
13. (Currently Amended) The method of claim 1, wherein the ~~composition is placed in~~ sample is a microarray, a bio-chip, a flow cell, an endoscope, a microscopic slide, a total

internal reflection cell, a catheter, an optical fiber, a waveguide, a body, food, soil, water or air

14. (Currently Amended) The method of claim 1, wherein the ~~electromagnetic radiation~~ source is selected from the group consisting of: a laser with single wavelength, laser with plurality wavelengths, laser diode, light emitted diode, lamp, bioluminescence, chemiluminescence, or electroluminescence.

15. (Currently Amended) The method of claim 1, wherein the method further comprises analyses of a low excited state or higher excited states of absorption bands or fluorescence bands of the ~~molecule~~ fluorophore.

16. Cancelled

17. (Currently Amended) The method of claim 1, wherein the monitoring of the multiband absorption ~~and/or~~ the multiband emission of the ~~molecule~~ fluorophore is performed by at least one of the selected techniques: absorption, fluorescence, time-resolved, polarization, energy transfer, hyperspectral imaging, Raman scattering, microscopy or microscopy imaging.

18.–19. Cancelled

20. (Currently Amended) The method of claim ~~[[5]]~~ 1, wherein the spacer further modifies the ~~plasmon-induced~~ multiband spectral property of the ~~molecule~~ fluorophore.